# VPDES PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the VPDES Permit listed below. This permit is being processed as a **MAJOR, MUNICIPAL** permit.

1. **PERMIT NO.**: VA0081281 **EXPIRATION DATE**: 1/27/2018

2. **FACILITY NAME AND LOCAL MAILING ADDRESS**

Hampton Roads Sanitation District
Virginia Initiative STP
1436 Air Rail Ave
Virginia Beach, VA 23455

**FACILITY LOCATION ADDRESS (IF DIFFERENT)**

4201 Powhatan Ave
Norfolk, VA 23508

**CONTACT AT FACILITY:**
**NAME**: Jamie Heisig-Mitchell
**TITLE**: Chief of Technical Services
**PHONE**: (757) 460-4220

**CONTACT AT LOCATION ADDRESS**
**NAME**: N/A
**TITLE**:
**PHONE**:

3. **OWNER CONTACT**: (TO RECEIVE PERMIT)
**NAME**: Mr. Edward G. Henifin
**TITLE**: General Manager
**COMPANY NAME**: HRSD
**ADDRESS**: 1436 Air Rail Ave
Virginia Beach, VA 23455

**PHONE**: (757) 460-2261

**CONSULTANT CONTACT**:
**NAME**: N/A
**FIRM NAME**:
**ADDRESS**:

**PHONE**: ( )

4. **PERMIT DRAFTED BY**: DEQ, Water Permits, Regional Office

Permit Writer(s): Deanna Austin DCA Date(s): 5/28/14
Reviewed By: Mark Sauer (MS) Date(s): 6/23/14

5. **PERMIT ACTION:**

( ) Issuance ( ) Reissuance ( ) Revoke & Reissue ( ) Owner Modification
(X) Board Modification ( ) Change of Ownership/Name [Effective Date: ]

6. **SUMMARY OF SPECIFIC ATTACHMENTS LABELED AS:**

| | |
|---|---|
| Attachment ____ | Site Inspection Report/Memorandum |
| Attachment 1 | Discharge Location/Topographic Map |
| Attachment 2 | Schematic/Plans & Specs/Site Map/Water Balance |
| Attachment 3 | TABLE I - Discharge/Outfall Description |
| Attachment 4 | TABLE II - Effluent Monitoring/Limitations |
| Attachment 5 | Effluent Limitations/Monitoring Rationale/Suitable Data/Antidegradation/Antibacksliding |
| Attachment 6 | Special Conditions Rationale |
| Attachment ____ | Toxics Monitoring/Toxics Reduction/WET Limit Rationale |
| Attachment ____ | Material Stored |
| Attachment 7 | Receiving Waters Info./Tier Determination/STORET Data/Stream Modeling |
| Attachment 7 | 303(d) Listed Segments |
| Attachment 8 | TABLE III(a) and TABLE III(b) - Change Sheets |
| Attachment ____ | NPDES Industrial Permit Rating Worksheet and EPA Permit Checklist |
| Attachment 9 | Chronology Sheet |
| Attachment ____ | Public Participation |

Board Initiated Modification: 3/24/14

7. **PERMIT CHARACTERIZATION:** (Check as many as appropriate)

(X) Existing Discharge
( ) Proposed Discharge
(X) Municipal
SIC Code #4952
( ) Industrial
SIC Code(s)
(X) POTW
( ) PVOTW
( ) Private
( ) Federal
( ) State
( ) Publicly-Owned Industrial

(X) Effluent Limited
(X) Water Quality Limited
( ) WET Limit
( ) Interim Limits in Permit
( ) Interim Limits in Other Document
( ) Compliance Schedule Required
( ) Site Specific WQ Criteria
( ) Variance to WQ Standards
( ) Water Effects Ratio
(X) Discharge to 303(d) Listed Segment
(X) Toxics Management Program Required
( ) Toxics Reduction Evaluation
( ) Storm Water Management Plan
(X) Pretreatment Program Required
( ) Possible Interstate Effect
(X) CBP Significant Dischargers List

8. **RECEIVING WATERS CLASSIFICATION:** River basin information.

Outfall No: 001

Receiving Stream: Elizabeth River
River Mile: 2-ELI0037.37
Basin: James River (Lower)
Subbasin: NA
Section: 1
Class: II
Special Standard(s): a, z, bb
Tidal: YES
7-Day/10-Year Low Flow: N/A
1-Day/10-Year Low Flow: N/A
30-Day/5-Year Low Flow: N/A
Harmonic Mean Flow: N/A

Outfall No(s): 002, 004-014

Receiving Stream: Unnamed Tributary to Elizabeth River
River Mile: 2-ELI003.37 (002, 003, 010-014)
2-ELI003.42 (004-009)
Basin: James River (Lower)
Subbasin: N/A
Section: 1
Class: II
Special Standard(s): a, z, bb
Tidal: YES
7-Day/10-Year Low Flow: N/A
1-Day/10-Year Low Flow: N/A
30-Day/5-Year Low Flow: N/A
Harmonic Mean Flow: N/A

**ONLY OUTFALL 001 IS ADDRESSED WITH THIS PERMIT MODIFICATION**

9. **FACILITY DESCRIPTION:** Describe the type facility from which the discharges originate.

Existing municipal discharge resulting from the discharge of treated domestic sewage.

The MODIFICATION consists of the addition of a Total Nitrogen annual average limit, monthly nitrogen reporting, and a year-to-date average reporting for Nitrogen. Also, a change in the Total Phosphorus annual average limit. All changes are based upon the CTC issued for the facility on 3/24/14.

10. **LICENSED OPERATOR REQUIREMENTS:** ( ) No (X) Yes Class: I

11. **RELIABILITY CLASS:** I

12. **SITE INSPECTION DATE:** **REPORT DATE:**

**Performed By:**

**SEE THE REISSUANCE FACT SHEET**

13. **DISCHARGE(S) LOCATION DESCRIPTION:** Provide USGS Topo which indicates the discharge location, significant (large) discharger(s) to the receiving stream, water intakes, and other items of interest.

Name of Topo: Norfolk, North Quadrant No.: 36A **SEE ATTACHMENT 1**

14. **ATTACH A SCHEMATIC OF THE WASTEWATER TREATMENT SYSTEM(S) [IND. & MUN.]. FOR INDUSTRIAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE PRODUCTION CYCLE(S) AND ACTIVITIES. FOR MUNICIPAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE TREATMENT PROVIDED.**

**Narrative:** Treatment at this facility includes flow measurement, screening, grit removal, primary and secondary clarification, activated sludge aeration including biological nutrient removal, phosphorous removal chlorination and prior to discharge into the main stem of the Elizabeth River via final effluent pumps. Solids handling consists of sludge gravity thickening, centrifuge dewatering and incineration. **SEE ATTACHMENT 2**

15. **DISCHARGE DESCRIPTION:** Describe each discharge originating from this facility.

**SEE ATTACHMENT 3**

16. **COMBINED TOTAL FLOW:**

TOTAL: 40.04 MGD (for public notice)

PROCESS FLOW: _____ MGD (IND.)

NONPROCESS/RAINFALL DEPENDENT FLOW: 0.041 (Est.)

DESIGN FLOW: 40 MGD (MUN.)

17. **STATUTORY OR REGULATORY BASIS FOR EFFLUENT LIMITATIONS AND SPECIAL CONDITIONS:** (Check all which are appropriate)

- X State Water Control Law
- X Clean Water Act
- X VPDES Permit Regulation (9 VAC 25-31-10 et seq.)
- X EPA NPDES Regulation (Federal Register)
- X EPA Effluent Guidelines (40 CFR 133 or 400 - 471)
- X Water Quality Standards (9 VAC 25-260-5 et seq.)
- _____ Wasteload Allocation from a TMDL or River Basin Plan

18. **EFFLUENT LIMITATIONS/MONITORING:** Provide all limitations and monitoring requirements being placed on each outfall.

**SEE TABLE II - ATTACHMENT 4**

19. **EFFLUENT LIMITATIONS/MONITORING RATIONALE:** Attach any analyses of an outfall by individual toxic parameter. As a minimum, it will include: statistics summary (number of data values, quantification level, expected value, variance, covariance, 97th percentile, and statistical method); wasteload allocation (acute, chronic and human health); effluent limitations determination; input data listing. Include all calculations used for each outfall and set of effluent limits and those used in any model(s). Include all calculations/documentation of any antidegradation or anti-backsliding issues in the development of any limitations; complete the review statements below. Provide a rationale for limiting internal waste streams and indicator pollutants. Attach chlorine mass balance calculations, if performed. Attach any additional information used to develop the limitations, including any applicable water quality standards calculations (acute, chronic and human health).

**OTHER CONSIDERATIONS IN LIMITATIONS DEVELOPMENT:**

**VARIANCES/ALTERNATE LIMITATIONS:** Provide justification or refutation rationale for requested variances or alternatives to required permit conditions/limitations. This includes, but is not limited to: waivers from testing requirements; variances from technology guidelines or water quality standards; WER/translator study consideration; variances from standard permit limits/conditions.

**No variances were given during this permit reissuance.**

**SUITABLE DATA:** In what, if any, effluent data were considered in the establishment of effluent limitations and provide all appropriate information/calculations.

All suitable effluent data were reviewed.

**ANTIDEGRADATION REVIEW:** Provide all appropriate information/calculations for the antidegradation review.

The receiving stream has been classified as tier 1; therefore, no further review is needed. Permit limits have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

**ANTIBACKSLIDING REVIEW:** Indicate if antibacksliding applies to this permit and, if so, provide all appropriate information.

There are no backsliding issues to address in this permit (i.e., limits as stringent or more stringent when compared to the previous permit).

There are no backsliding issues to address in this **MODIFICATION**.
**SEE ATTACHMENT 5**

20. **SPECIAL CONDITIONS RATIONALE:** Provide a rationale for each of the permit's special conditions.

**SEE ATTACHMENT 6**

21. **TOXICS MONITORING/TOXICS REDUCTION AND WET LIMIT SPECIAL CONDITIONS RATIONALE:** Provide the justification for any toxics monitoring program and/or toxics reduction program and WET limit.

**NOT APPLICABLE FOR THIS MODIFICATION, NO CHANGES MADE TO TOXICS MONITORING.**

22. **SLUDGE DISPOSAL PLAN:** Provide a description of the sludge disposal plan (e.g., type sludge, treatment provided and disposal method). Indicate if any of the plan elements are included within the permit.

**NOT APPLICABLE FOR THIS MODIFICATION, NO CHANGES MADE TO SLUDGE DISPOSAL.**

23. **MATERIAL STORED:** List the type and quantity of wastes, fluids, or pollutants being stored at this facility. Briefly describe the storage facilities and list, if any, measures taken to prevent the stored material from reaching State waters.

**NOT APPLICABLE FOR THIS MODIFICATION, NO CHANGES MADE TO MATERIALS STORED.**

24. **RECEIVING WATERS INFORMATION:** Refer to the State Water Control Board's Water Quality Standards [e.g., River Basin Section Tables (9 VAC 25-260-5 et seq.). **Use 9 VAC 25-260-140 C (introduction and numbered paragraph) to address tidal waters where fresh water standards would be applied or transitional waters where the most stringent of fresh or salt water standards would be applied.** Attach any memoranda or other information which helped to develop permit conditions (i.e. tier determinations, PReP complaints, special water quality studies, STORET data and other biological and/or chemical data, etc.

**SEE ATTACHMENT 7**

25 **305(b)/303(d) Listed Segments:** Indicate if the facility discharges to a segment that is listed on the current 303(d) list and, if so, provide all appropriate information/calculations.

This facility discharges directly to the Elizabeth River. This receiving stream segment has been listed in Category 5 of the 305(b)/303(d) list for non-attainment of DO, PCB in Fish Tissue, and Aquatic Life, . EPA approved the Chesapeake Bay TMDL on 12/29/10. for this segment for nitrogen, phosphorus and TSS. Because an aggregated WLA exists, the permit did not receive an individual WLA. The aggregated WLA is presented as a delivered load for each of the impaired 92 Bay segments.

26. **CHANGES TO PERMIT:** Use **TABLE III(a)** to record any changes from the previous permit and the rationale for those changes. Use **TABLE III(b)** to record any changes made to the permit during the permit processing period and the rationale for those changes [i.e., use for comments from the applicant, VDH, EPA, other agencies and/or the public where comments resulted in changes to the permit limitations or any other changes associated with the special conditions or reporting requirements].

**SEE ATTACHMENT 8**

27. **NPDES INDUSTRIAL PERMIT RATING WORKSHEET:**

N/A - This is a municipal facility.

28. **DEQ PLANNING COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from DEQ planning.

NO CHANGES: MODFICATION

29. **PUBLIC PARTICIPATION:** Document comments/responses received during the public participation process. If comments/responses provided, especially if they result in changes to the permit, place in the attachment.

**VDH/DSS COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from the Virginia Dept. of Health and the Div. of Shellfish Sanitation and noted how resolved.

The VDH reviewed the application and waived their right to comment and/or object on the adequacy of the draft permit. Memo received 6/10/14.

The DSS has no comments on the application/draft permit. No response was received. DSS comments from the previous reissuance showed that the discharge would not increase the condemned area. There has been no change or increase to the operation for this reissuance so it is determined that there are no shellfish impacts expected

**EPA COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from the U.S. Environmental Protection Agency and noted how resolved.

EPA has no objections to the adequacy of the draft permit.

**ADJACENT STATE COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from an adjacent state and noted how resolved.

Not Applicable.

**OTHER AGENCY COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from any other agencies (e.g., VIMS, VMRC, DGIF, etc.) and noted how resolved.

Not Applicable.

**OTHER COMMENTS RECEIVED FROM RIPARIAN OWNERS/CITIZENS ON DRAFT PERMIT:** Document any comments received from other sources and note how resolved.

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation, and no comments were received.

**DESCRIBE PN COMMENTS AND RESOLUTIONS. PROVIDE PUBLIC HEARING DATE AND REFERENCE BACKGROUND MEMORANDUM, IF APPROPRIATE.**

**PUBLIC NOTICE INFORMATION:** Comment Period: Start Date 7/9/14
End Date 8/8/14

Persons may comment in writing or by e-mail to the DEQ on the proposed issuance/ reissuance/modification of the permit within 30 days from the date of the first notice. Address all comments to the contact person listed below. Written or e-mail comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requestor's interests would be directly and adversely affected by the proposed permit action.

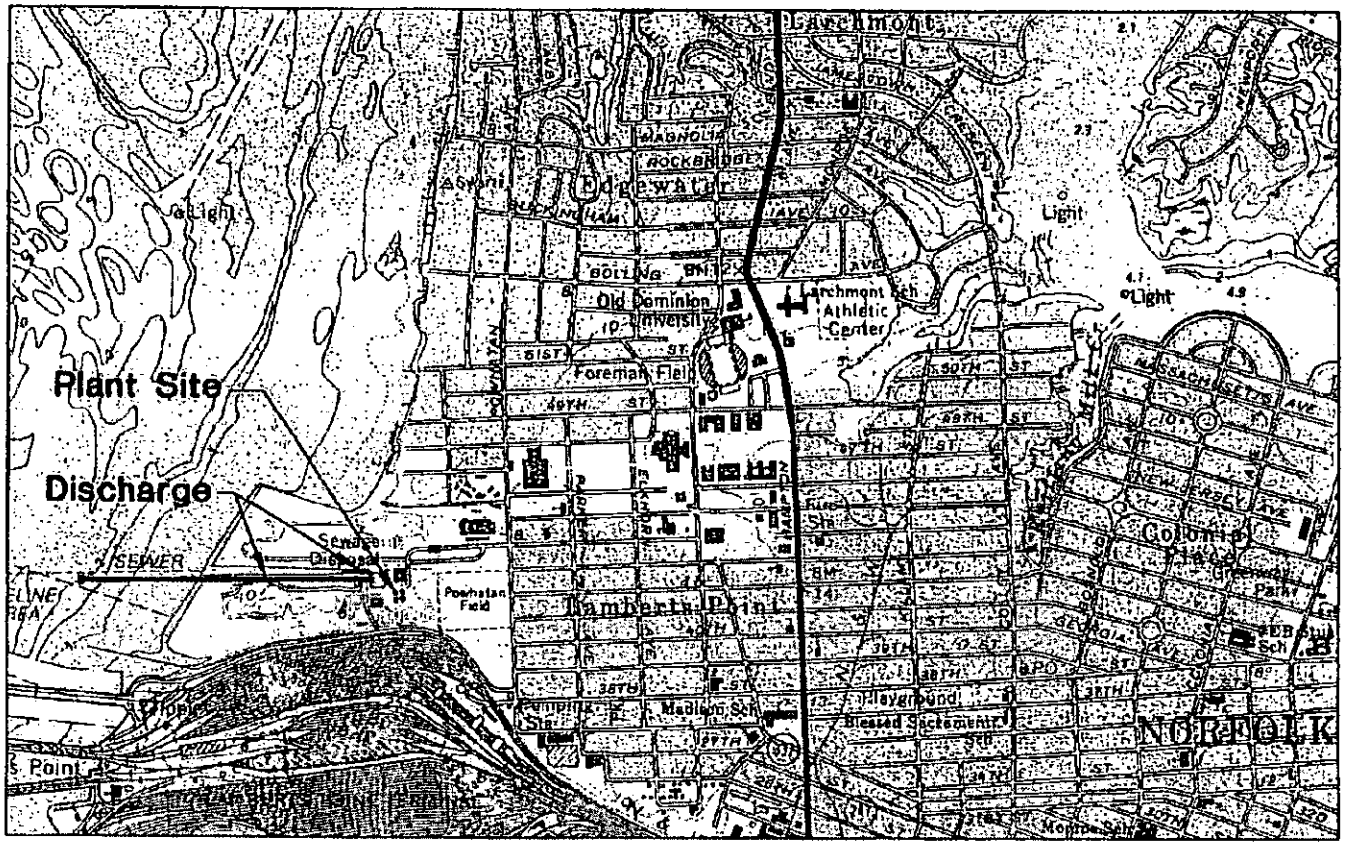
All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Deanna Austin at: Department of Environmental Quality (DEQ), Tidewater Regional Office, 5636 Southern Boulevard, Virginia Beach, VA 23462. Telephone: 757-518-2008 E-mail:deanna.austin@deq.virginia.gov

Following the comment period, the Board will make a determination regarding the proposed issuance/reissuance/modification. This determination will become effective, unless the Director grants a public hearing. Due notice of any public hearing will be given.

30. **ADDITIONAL FACT SHEET COMMENTS/PERTINENT INFORMATION:**

# ATTACHMENT 1

# DISCHARGE LOCATION/TOPOGRAPHIC MAP




**Location Map**
**for**
**Virginia Initiative Plant**

June 2003

Scale: 1"=2000'

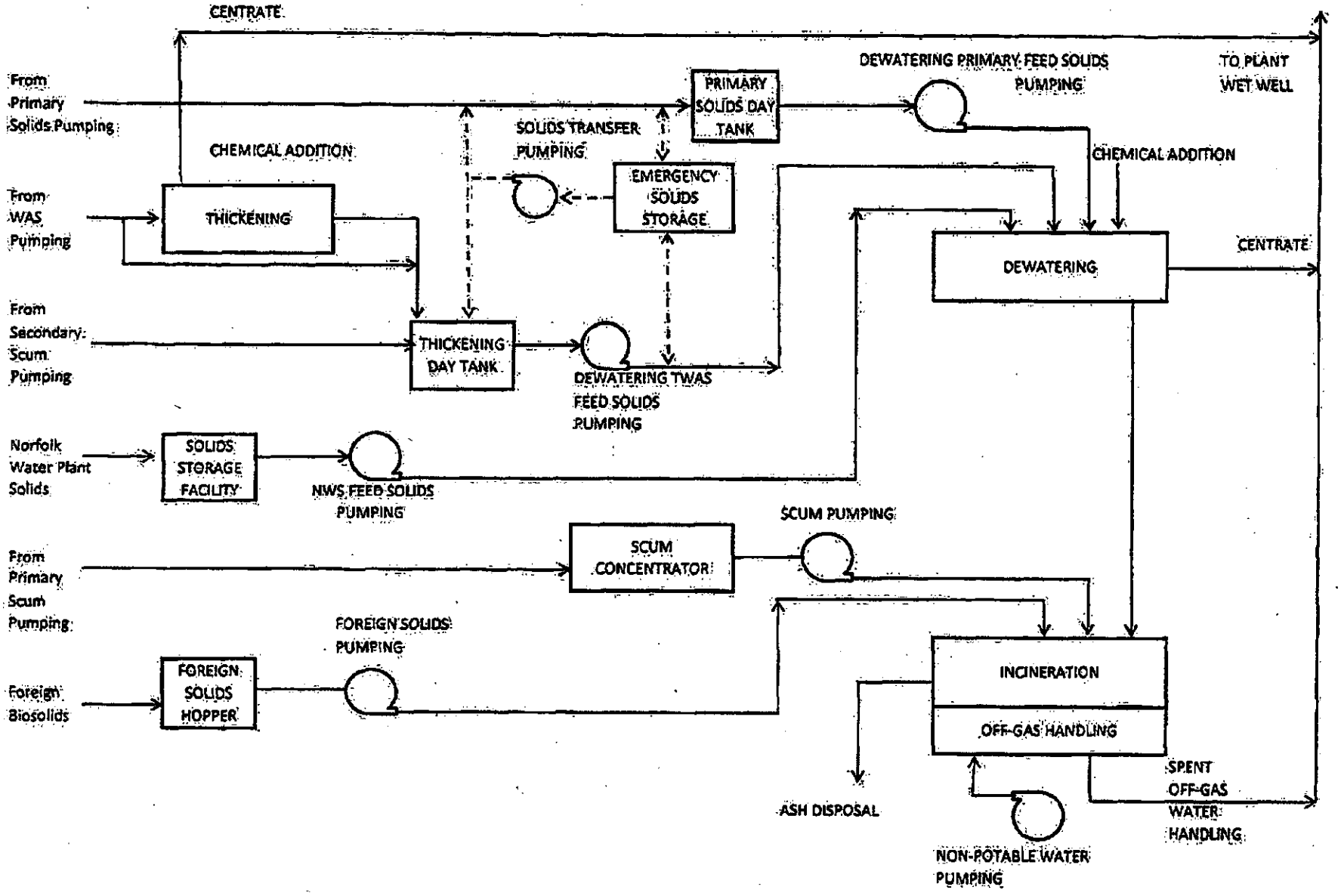
USGS Map Reference

# ATTACHMENT 2

# SCHEMATIC/PLANS & SPECS/SITE MAP/ WATER BALANCE

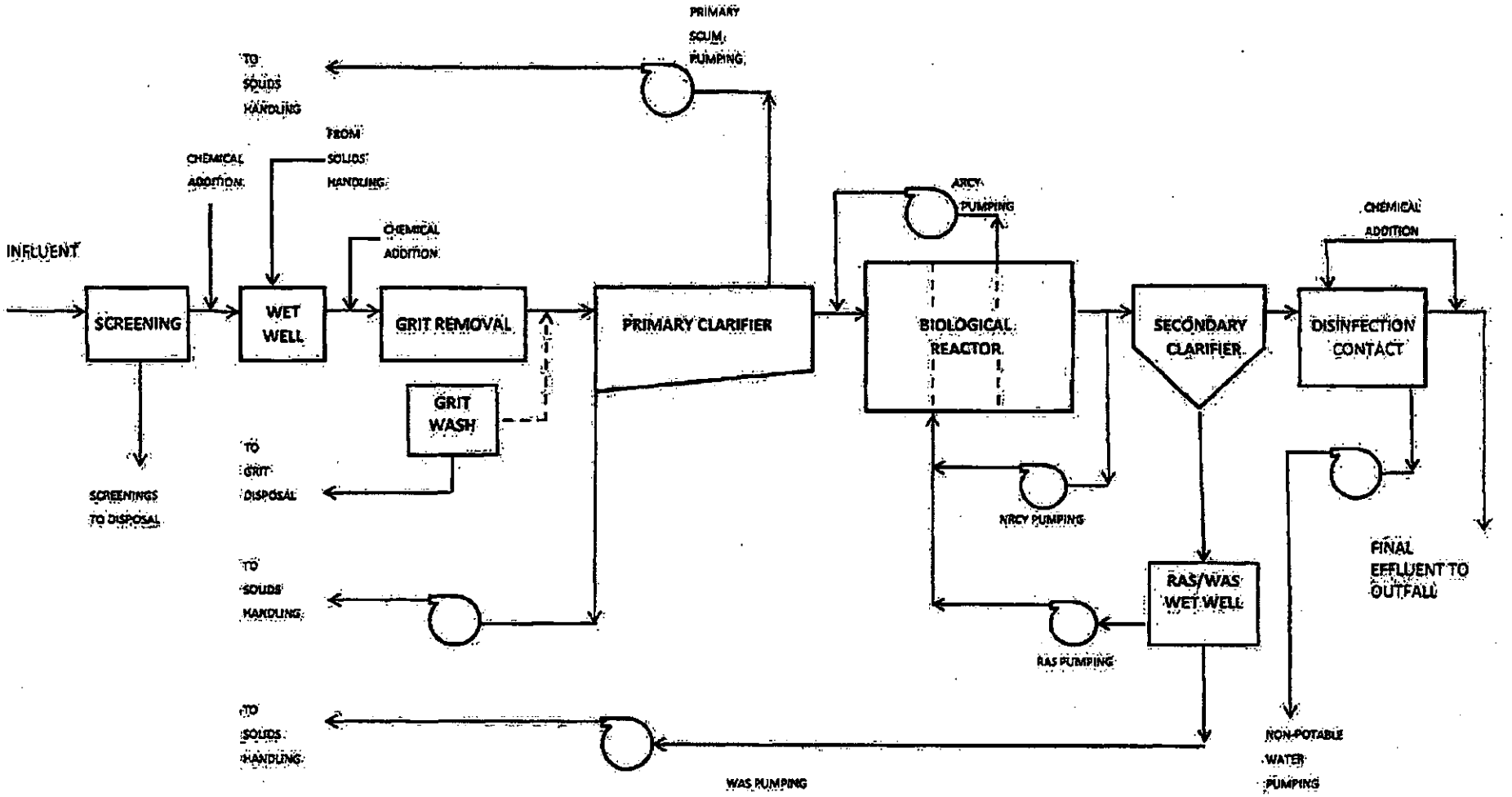
# VIRGINIA INITIATIVE PLANT

## Solids Handling Flow Diagram



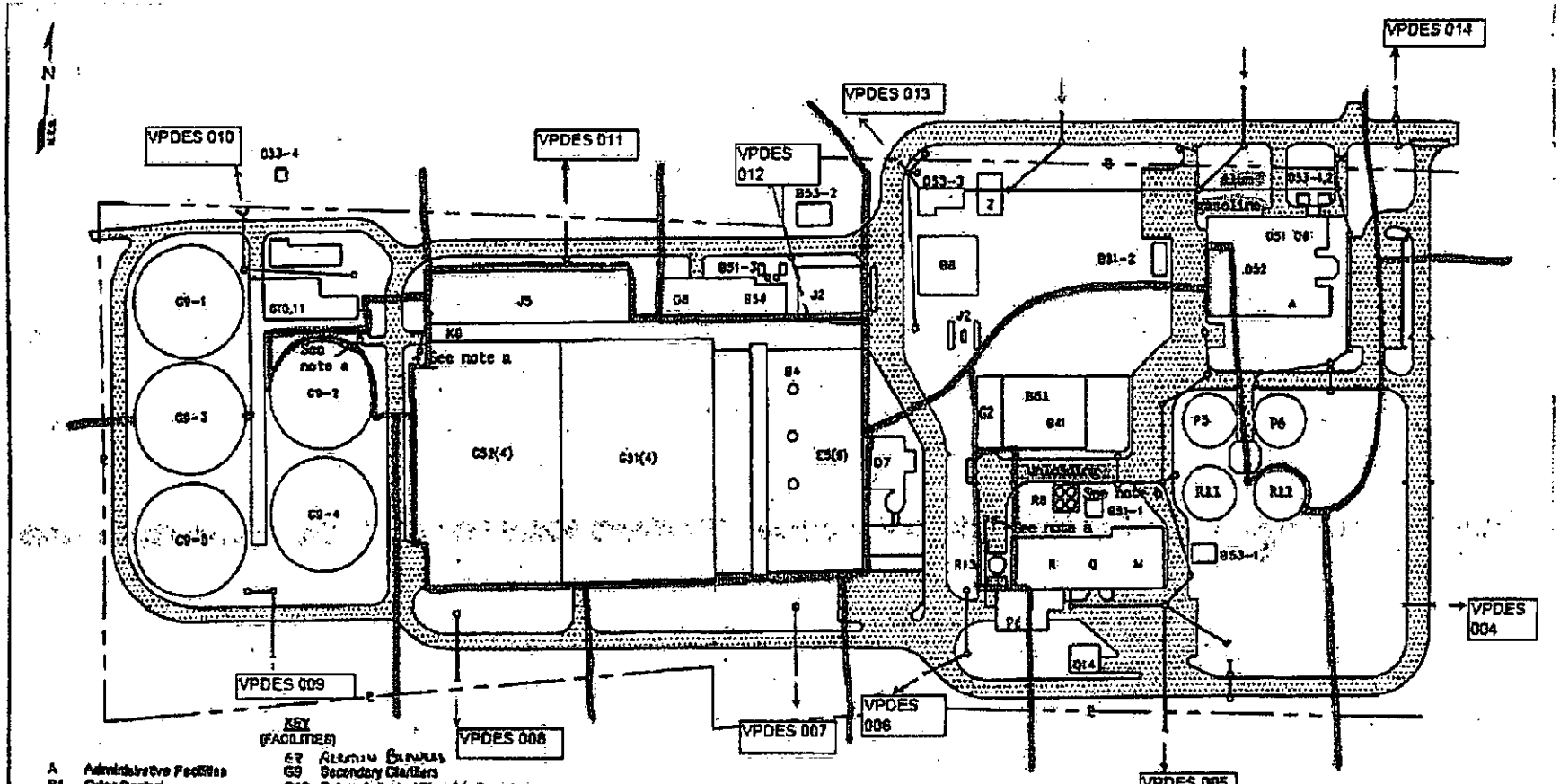
# VIRGINIA INITIATIVE PLANT

## Sewage Treatment Flow Diagram



HRSD
Cleaning wastewater every day for a better Bay.

# VIRGINIA INITIATIVE PLANT- OUTFALL LOCATIONS




KEY
(FACILITIES)

| | | | |
|---|---|---|---|
| A | Administrative Facilities | G9 | Secondary Clarifiers |
| B4 | Odor Control | G10 | Return Activated Biosolids Pumping |
| B41 | Odor Control/Chemical Feed | G11 | Waste Activated Biosolids Pumping |
| B51 | Substations | J2 | Disinfection Chemical Feed |
| B53 | Switchgear Building | J5 | Contact Tank |
| B54 | Electrical Room | K8 | Non-Potable Water Pumping |
| B8 | Emergency Generator | M | Thickening |
| B81 | Emerg.Gen./Fuel Supply | P5 | Emergency Biosolids Storage Tanks |
| D51 | Raw Influent Pumping | P6 | Norfolk Water Solids |
| D52 | Raw Influent Wet Well | D | Dewatering |
| D53 | Junction Boxes | Q14 | Foreign Biosolids Unloading Station |
| D6 | Screenings | R | Incineration |
| D7 | Grit Removal | R8 | Incineration/Fuel Supply |
| E5 | Primary Clarifiers | R11 | Nitrification Enhancement |
| G2 | Secondary/Chemical Feed | R13 | Ash Handling |
| Q51 | Anaerobic/Anoxic Tanks | Z | Electrical Storage Building |
| Q52 | Aeration Tank | | |

notes: a Manhole drains into plant sanitary sewer
b. Drain plugged in containment area

# ATTACHMENT 3

# TABLE I - DISCHARGE/OUTFALL DESCRIPTION

**OUTFALL 001 IS THE ONLY OUTFALL ADDRESSED IN THIS MODIFICATION**

TABLE I

NUMBER AND DESCRIPTION OF OUTFALLS

| OUTFALL NO. | DISCHARGE LOCATION | DISCHARGE SOURCE (1) | TREATMENT (2) | FLOW (3) |
|---|---|---|---|---|
| 001 | 36°52'57"N 076°19'20"W | POTW, primary treated wastewater effluent discharge | Secondary treatment provided by screening, grit removal, primary and secondary clarification, activated sludge including enhanced biological nutrient removal chlorination, and dechlorination. | 40 MGD design flow |
| 002 | 36°56'18"N 076°61'032"W | POTW, alternate for fully treated waste | Same as above | Same as above |
| 003 | 36°52'58"N 076°19'16"W | POTW, emergency bypass point | No treatment except Chlorine - not included in the permit | N/A |
| 004 | 36°52'55"N 076°18'58"W | Storm Water | No treatment provided, best management practices used. | 0.006 MG |
| 005 | 36°52'52"N 076°18'59"W | Storm Water | No treatment provided, best management practices used. | 0.009 MG |
| 006 | 36°52'55"N 076°19'05"W | Storm Water | No treatment provided, best management practices used. | 0.003 MG |
| 007 | 36°52'59"N 076°19'07"W | Storm Water | No treatment provided, best management practices used. | 0.002 MG |
| 008 | 36°52'53"N 076°19'14"W | Storm Water | No treatment provided, best management practices used. | 0.0009 MG |
| 009 | 36°52'51"N 076°19'15"W | Storm Water | No treatment provided, best management practices used. | 0.005 MG |
| 010 | 36°53'01"N 076°19'13"W | Storm Water | No treatment provided, best management practices used. | 0.003 MG |
| 011 | 36°52'59"N 076°19'10"W | Storm Water | No treatment provided, best management practices used. | 0.0009 MG |
| 012 | 36°52'57"N 076°19'07"W | Storm Water | No treatment provided, best management practices used. | 0.001 MG |
| 013 | 36°52'58"N 076°19'05"W | Storm Water | No treatment provided, best management practices used. | 0.008 MG |
| 014 | 36°53'01"N 076°18'57"W | Storm Water | No treatment provided best management practices used. | 0.002 MG |

(1) List operations contributing to flow
(2) Give brief description, unit by unit
(3) Give maximum 30-day average flow for industry and design flow for municipal

# ATTACHMENT 4

# TABLE II - EFFLUENT MONITORING/LIMITATIONS

**OUTFALL 001 IS THE ONLY OUTFALL ADDRESSED IN THIS MODIFICATION**

## TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 001 and 002[i] DESIGN FLOW: 40 MGD
Outfall Description: Municipal Discharge
SIC CODE: 4952
( ) Final Limits (X) Interim Limits Effective Dates - From: Modification Effective Date To: CTO Issuance Date

| PARAMETER & UNITS | BASIS FOR LIMITS | DESIGN FLOW MULTIPLIER | EFFLUENT LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|---|---|---|---|
| | | | MONTHLY AVERAGE | WEEKLY AVERAGE | MINIMUM | MAXIMUM | FREQUENCY | SAMPLE TYPE |
| Flow (MGD)[a] | 3 | | NL | NA | NA | NL | Continuous | TI & RE** |
| pH (S.U.) | 1 | | NA | NA | 6.0 | 9.0 | 1/Day | Grab |
| BOD5 (mg/l)[c][d] | 1 | 40 | 30 | 45 | NA | NA | 3/Week | 24-Hr. Comp |
| BOD5 (kg/d)[d] | 1 | 40 | 4542 | 6813 | NA | NA | 3/Week | 24-Hr. Comp |
| TSS (mg/l)[c][d] | 1 | 40 | 30 | 45 | NA | NA | 3/Week | 24-Hr. Comp |
| TSS (kg/d)[d] | 1 | 40 | 4542 | 6813 | NA | NA | 3/Week | 24-Hr. Comp |
| TRC (mg/l)[b][c] | 2 | | 0.20 | 2.4 | NA | NA | 1/Day | Grab |
| Total Phosphorus (mg/l) | 3 | | NL | NA | NA | NA | 1/Month | 24-Hr. Comp |
| Total Phosphorus (mg/l) Year to date [f] | 3 | | NL | NA | NA | NA | 1/Month | Calc |
| Total Phosphorus (mg/l) Calendar Year [e][f] | 3 | | 2.0 | NA | NA | NA | 1/Year | Calc |
| Fecal Coliform (n/cml)[d][g] | 2 | | 200 | NA | NA | NA | 1/Week (Between 10 am & 4 pm) | Grab |
| Enterococci (n/cml) [d][h] | 2 | | 35 | NA | NA | NA | 2/Month (Between 10 am & 4 pm) | Grab |

**Totalizing, Indicating & Recording Equipment

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY

1 Year= January 1-December 31; reported for each full calendar year

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

In addition to any Total Nitrogen or Total Phosphorus concentration limits listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040090, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

[a] The design flow of this treatment facility is 40 MGD. See Part I.C.5 for additional flow requirements.
[b] See Part I.B. for additional chlorine monitoring instructions.
[c] See Parts I.C.7 and I.C.8 for quantification levels and reporting requirements, respectively.
[d] See Part I.C.9 for additional instructions regarding effluent monitoring frequencies.
[e] Annual average limitation, based on a calculation of all samples collected during the calendar year.
[f] See Part I.C.12.for additional instructions regarding Total Phosphorus
[g] Fecal Coliform monthly average is calculated as a geometric mean.
[h] Enterococci monthly average is calculated as a geometric mean. Samples must be taken at least 7 days apart.
[i] Monitoring for Outfall 001 represents Outfall 002. There is no Part I.A. reporting for Outfall 002. See Part I.C.6. for additional requirements for Outfall 002.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.
3. At least 85% removal for BOD and TSS must be attained for this effluent.

The basis for the limitations codes are:
1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

## TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 001 and 002[i] DESIGN FLOW: 40 MGD
Outfall Description: Municipal Discharge
SIC CODE: 4952
(X) Final Limits ( )Interim Limits Effective Dates - From: CTO Issuance Date To: Expiration Date

| PARAMETER & UNITS | BASIS FOR LIMITS | DESIGN FLOW MULTIPLIER | EFFLUENT LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|---|---|---|---|
| | | | MONTHLY AVERAGE | WEEKLY AVERAGE | MINIMUM | MAXIMUM | FREQUENCY | SAMPLE TYPE |
| Flow (MGD)[a] | 3 | | NL | NA | NA | NL | Continuous | TI & RE** |
| pH (S.U.) | 1 | | NA | NA | 6.0 | 9.0 | 1/Day | Grab |
| BOD5 (mg/l)[c][d] | 1 | 40 | 30 | 45 | NA | NA | 3/Week | 24-Hr. Comp |
| BOD5 (kg/d)[d] | 1 | 40 | 4542 | 6813 | NA | NA | 3/Week | 24-Hr. Comp |
| TSS (mg/l)[c][d] | 1 | 40 | 30 | 45 | NA | NA | 3/Week | 24-Hr. Comp |
| TSS (kg/d)[d] | 1 | 40 | 4542 | 6813 | NA | NA | 3/Week | 24-Hr. Comp |
| TRC (mg/l)[b][c] | 2 | | 0.20 | 2.4 | NA | NA | 1/Day | Grab |
| Total Phosphorus (mg/l) | 3 | | NL | NA | NA | NA | 1/Month | 24-Hr. Comp |
| Total Phosphorus (mg/l) Year to date [f] | 3 | | NL | NA | NA | NA | 1/Month | Calc |
| Total Phosphorus (mg/l) Calendar Year [e][f] | 1 | | 1.0 | NA | NA | NA | 1/Year | Calc |
| Total Nitrogen (mg/l) | 3 | | NL | NA | NA | NA | 1/Month | 24-Hr. Comp |
| Total Nitrogen (mg/l) Year to date [f] | 3 | | NL | NA | NA | NA | 1/Month | Calc |
| Total Nitrogen(mg/l) Calendar Year [e][f] | 1 | | 5.0 | NA | NA | NA | 1/Year | Calc |

| PARAMETER & UNITS | BASIS FOR LIMITS | DESIGN FLOW MULTIPLIER | EFFLUENT LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|---|---|---|---|
| | | | MONTHLY AVERAGE | WEEKLY AVERAGE | MINIMUM | MAXIMUM | FREQUENCY | SAMPLE TYPE |
| Fecal Coliform (n/cml)[d] [g] | 2 | | 200 | NA | NA | NA | 1/Week (Between 10 am & 4 pm) | Grab |
| Enterococci (n/cml) [d][h] | 2 | | 35 | NA | NA | NA | 2/Month (Between 10 am & 4 pm) | Grab |

**Totalizing, Indicating & Recording Equipment
NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY

1 Year= January 1-December 31; reported for each full calendar year

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

In addition to any Total Nitrogen or Total Phosphorus concentration limits listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040090, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

[a] The design flow of this treatment facility is 40 MGD. See Part I.C.5 for additional flow requirements.
[b] See Part I.B. for additional chlorine monitoring instructions.
[c] See Parts I.C.7 and I.C.8 for quantification levels and reporting requirements, respectively.
[d] See Part I.C.9 for additional instructions regarding effluent monitoring frequencies.
[e] Annual average limitation, based on a calculation of all samples collected during the calendar year.
[f] See Part I.C.12.for additional instructions regarding Total Phosphorus and Total Nitrogen.
[g] Fecal Coliform monthly average is calculated as a geometric mean.
[h] Enterococci monthly average is calculated as a geometric mean. Samples must be taken at least 7 days apart.
[i] Monitoring for Outfall 001 represents Outfall 002. There is no Part I.A. reporting for Outfall 002. See Part I.C.6. for additional requirements for Outfall 002.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.
3. At least 85% removal for BOD and TSS must be attained for this effluent.

The basis for the limitations codes are:
1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

TABLE II - STORM WATER EFFLUENT LIMITATIONS/MONITORING

OUTFALLS # 004-014
Outfall Description: Stormwater Not Associated With Regulated Industrial Activity
SIC CODE: 4952

THESE OUTFALLS SHALL CONTAIN STORM WATER RUNOFF NOT ASSOCIATED WITH A REGULATED INDUSTRIAL ACTIVITY WHERE NO MONITORING IS REQUIRED. THERE SHALL BE NO DISCHARGE OF PROCESS WASTEWATER FROM THESE OUTFALLS.

**No exposure status has been given to these outfalls.**

TABLE II - MUNICIPAL MINOR EFFLUENT LIMITATIONS
Attachment 5 continued

Final Chlorine Limitations Effective Dates - From: Permit Issuance To: Permit Expiration

| TRC ** | AFTER CL2 CONTACT TANK (Dechlor. Required) | | | AFTER DECHLORINATION | | AFTER CL2 CONTACT TANK (Dechlor. Not Required) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MIN. | EXC. | INST. MIN. | WKLY AVG. | INST. MAX. | PERMIT RANGE | EXC. | REPORT-ING RANGE | EXC. | TECH. MAX. |
| a) Non-Detect. Dechlor. Required | --- | --- | --- | --- | --- | NA | NA | NA | NA | NA |
| b) Detect. Dechlor. Required | **0.30 mg/l** | **36** | **0.30 mg/l*** | **2.4 mg/l** | --- | NA | NA | NA | NA | NA |
| c) No Dechlor. | NA | NA | NA | NA | NA | --- | --- | --- | --- | --- |

* Reporting is required when 3 or more consecutive readings are <0.3 mg/l or when the TRC is <0.1 mg/l.

** --Chlorine mass balance Cw (W for Tidal systems): check one

____a) $C_w < 0.1$ mg/l [dechlor. required, non-detectable format]

_X_ b) 0.1 mg/l $\leq C_w <$ 2.0 mg/l (2.5 mg/l for PWS, Shellfish waters) [dechlor. required, detectable format]

____ c) $C_w > 2.0$ mg/l (2.5 mg/l for PWS, Shellfish waters) [dechlor. not required, include a restrictive technology max. value]

The design flow of this treatment facility is 15 MGD.

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY

See Part I.B. for additional TRC limitations.

# ATTACHMENT 5

# EFFLUENT LIMITATIONS/MONITORING RATIONALE/SUITABLE DATA/ ANTIDEGRADATION/ANTIBACKSLIDING

**ONLY OUTFALL 001 IS ADDRESSED IN THIS MODIFICATION**

HRSD Virginia Initiative STP

**Rationale for Parameters AND Limitations addressed in this MODIFICATION**

**Outfall 001**

**Total Nitrogen Calendar Year**

A limit of 5.0 mg/l will be added for Total Nitrogen as a final limit. Part I Section C.4. of the permit states that upon issuance of a CTC, DEQ staff shall initiate modification of the permit to include annual concentration limits based on the nutrient removal technologies listed in the CTC.
The CTC for this facility was issued on 3/24/14 by DEQ Clean Water Financing/Assistance Program is attached to this section.
The limit of 5.0 is in accordance with the significant figure guidance document 06-2016.

**Total Nitrogen Year to Date**

There is no limit for the monthly average TN Year-to-date parameter. This parameter was added to the permit in accordance with guidance document 07-2008. Reporting is 1/M and is a calculation. Data for this parameter is collected in accordance with the VPDES Permit VAN040090 for the James River Watershed held by HRSD.

**Total Nitrogen**

There will be no limit for the monthly average nitrogen. This parameter is added to the modification and monitoring becomes effective upon the issuance date of the CTO for the nutrient removal facilities. This parameter is added in accordance with guidance document 07-2008. Reporting will be 1/M. Data is collected in accordance with the VPDES permit VAN040090 for the James River Watershed. Reporting for this parameter is required in the individual permit (IP) because the annual concentration limit is contained in the IP. All data used to calculate and determine compliance with the limit in the IP needs to be in the same document and reported on the same for as the limit.

**Total Phosphorus Calendar Year**

Upon issuance of the CTO for the nutrient facilities upgrade, the annual average concentration limit of 2.0 mg/l for Total Phosphorus will be replaced with 1.0 mg/l. This is included in the modification as a final limit. The CTC for this project was issued on 3/24/14 and is attached to this section of the fact sheet.

# ATTACHMENT 6

# SPECIAL CONDITIONS RATIONALE

**ONLY OUTFALL 001 IS ADDRESSED IN THIS MODIFICATION**

VPDES PERMIT PROGRAM
LIST OF SPECIAL CONDITIONS RATIONALE

**SPECIAL CONDITION C.12. IS THE ONLY CONDTION ADDRESSED IN THIS MODIFICATION**

Name of Condition:

C. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

12. Total Phosphorus and Total Nitrogen Nutrient reporting calculations

Rationale: §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, this special condition is intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

March 24, 2014

City of Norfolk
HRSD VIP STW
VA0081281, PTL# 25744

Mr. John Dano, P. E.
HRSD
1436 Air Rail Avenue
Virginia Beach, VA 23455

Dear Mr. Dano:

This Department has received plans, specifications and addenda (the latter via e-mail in electronic format) for the upgrade to HRSD's VIP Sewage Treatment Works (STW) as prepared by HDR. The plans include nine hundred and twenty three (923) sheets, entitled "Hampton Road Sanitation District, HRSD, Virginia Initiative Plant, Nutrient Reduction Improvements, Contract B, and Norfolk, Virginia" and bear a P.E. seal date of February 26, 2014. The plans consist of six (6) separate sets of drawing as thus: Volume 4 of 9: General/Civil; Volume 5 of 9: Mechanical; Volume 6 of 9: Structural; Volume 7 of 9: Architectural, HVAC, Plumbing; Volume 8 of 9: Electrical; and Volume 9 of 9: Instrumentation. The specifications, entitled, "Project Manual for the construction of Virginia Initiative Plant, Nutrient Reduction Improvements, Contract B, and City of Norfolk, Virginia" bear a P.E. seal date of November 7, 2013. The specifications consist of three (3) separate sets of volumes as thus: Volume 1of 9, Volume 2of 9, and Volume 3 of 9, respectively. Addendums 1, 2 , 3, and 4 dated December 31, 2013, December 20, 2013, January 9,2014, and January 21,2014, respectively, describe additional changes (additions, deletions, as applicable) to the drawings (plans) and specifications.

Contract B for this STW is primarily for addition of a Versatile Bio Reactor (VBR), Secondary Clarifier, Carbon Storage and Feed facilities, and other associated appurtenances and components. The addition of the VBR, to the existing VIP at this facility, will allow it to operate in a 5-stage suspended growth activated sludge process. During dry weather conditions, the

reactor will operate in series with the unaltered VIP process to provide a second anoxic zone fed with external carbon source( Methanol, Ethanol or Acetic Acid) for denitrification followed by a short reaeration zone. During wet weather conditions, the reactor will operate in parallel with the unaltered VIP process in a completely aerobic mode and relieve certain hydraulic constraints to facilitate VIP to handle high storm flows. The VBR will consist of 2 tanks with 8 zones each. The first tank will have a volume of 2.23 MG (million gallons) and the second one, 2.22 MG. The cells 1, 3, 5, 7(Tank 1) each will be equipped with 250 diffusers and cells 2, 4, 6, 8( Tank 2) each will be equipped with 225 diffusers. One new 12,000 SCFM single-stage blower will augment the two existing blowers for air requirements. Four (4) carbon feed pumps (2 duty, 2 spare) each with a capacity of 27 GPH (gallons per hour) will be provided. Two carbon source storage tanks, each 12,000 gallons capacity, will also be provided. Six (6) ARCY (Anoxic Recycle) pumps, each at 5,555 gpm at 20 feet of TDH, will be furnished for the reactors. A new secondary clarifier, 125 feet in diameter and 15.8 feet sidewater depth, will aid the five existing clarifiers.

This Department has already received the "Non-WQIF Funded Component Certification" with a P.E. seal date of November 13, 2013 for the non-funded portions of this project (not described here).

This upgrade will facilitate this facility meet annual average concentrations for TN (Total Nitrogen) of 5 mg/l, and TP (Total Phosphorus) of 1 mg/ l, respectively. The facility design flow will remain at 40 MGD, as will all other effluent values required in its the most recent VPDES Permit currently in effect.

The evaluation of these plans and specifications has been confined to technical requirements and design criteria as stipulated in the Commonwealth of Virginia's Sewage Collection and Treatment Regulations (9 VAC 25-790).

In accordance with the Code of Virginia 1950, as amended, Title 62.1, Section 62.1-44.19, this letter report is to advise that previously mentioned plans, specifications and addenda are technically adequate and are approved.

This letter provides your authorization to construct the previously described project. This approval is valid for a period of five (5) years from the date of this letter. Please be aware that disturbance of any streams and/or wetlands may also require permitting. If you believe that this may be the case, please contact DEQ's Tidewater Regional Office at (757)-518-2000 for further information.

Please note: The DEQ CWFAP/ Wastewater Engineering approvals and staff knowledge of project status and project issues do not substitute for nor relieve any parties from compliance with requirements for other DEQ divisions, including WQIF Grant and CWFAP Loan programs, consent orders, permits, and other regulatory and enforcement matters of DEQ and other agencies.

An engineer's Statement of Completion must be submitted to this Office in order to initiate CTO procedures.

One copy of the previously described plans and specifications with appropriate approval stamps is being mailed to you under separate cover..

Sincerely,

Walter Gills, Program Manager
Clean Water Financing/Assistance Program

cc: HDR (William M'Coy, P.E.)
City of Norfolk City Manager
City of Norfolk Building Official
CWFAP (J. S. Desai, Steve Raney)
TRO (Mark Sauer, Kim Butler, P.E.)

# ATTACHMENT 7

# RECEIVING WATERS INFO./ TIER DETERMINATION/STORET DATA/ STREAM MODELING

# 303(d) LISTED SEGMENTS

**NO CHANGES WITH THIS MODIFICATION**

# TMDL Permit Review

**Date:** 3/16/2012

**To:** Jennifer Howell, TRO √ JSH 3/22/2012

**Permit Writer:** Deanna Austin

**Facility:** HRSD-Virginia Initative STP

**Permit Number:** VA0081281

**New or Renewal:** Renewal

**Permit Expiration Date:** 1/27/2013

**Waterbody ID:** VAT G15 E Elizabeth River-All outfalls

**Topo Name:** 035A Norfolk North

**Facility Address** 4201 Powhatan Ave Norfolk, VA 23508

## Receiving Stream:

| | |
|---|---|
| **Stream Name: Elizabeth River-Outfall 001** | |
| Click here to enter text. | |
| **Stream Data Requested?** Click here to enter text. | |
| **Outfall #: 001** | **Lat Lon: 36 52 57 76 19 20** |
| **Stream Name (2):** Click here to enter text. | |
| **All stormwater outfalls are not monitored-No Exposure Certifications have been given** | |
| **Stream Data Requested?** Click here to enter text. | |
| | |
| | |
| | |
| | |
| | |
| | |

**Is there a design flow change? If yes give the change. No change**

## TMDL Review:

| | |
|---|---|
| **Has a TMDL been approved that includes the receiving stream?** | |
| Yes | |
| **If yes, Include TMDL Name, Pollutant(s) and date of approval:** | |
| Chesapeake Bay TMDL EPA approved 12/29/2010 : nitrogen, phosphorus, and TSS | |
| **Is the facility assigned a WLA from the TMDL?** | **No** |
| **If Yes, what is the WLA?** | |
| VA0081281 was listed in the Chesapeake Bay TMDL under Bay segment ELIPH as a non-significant discharger. Because an aggregated WLA exists, this permit did not receive an individual WLA. The aggregated WLA is presented as a delivered load for each of the impaired 92 Bay segments. (Appendix Q) | |

**Review will be completed in 30 days of receipt of request.**

### Additional Comments:

| |
|---|
| This permit falls within the Tidal James River PCB TMDL Watershed. The anticipated TMDL completion date is 2014 |

# Planning Permit Review

**Date:** 3/16/2012

**To:** Kristie Britt, TRO

**Permit Writer:** Deanna Austin

**Facility:** HRSD-Virginia Initiative STP

**Permit Number:** VA0081281

**New or Renewal:** Renewal

**Permit Expiration Date:** 1/27/2013

**Waterbody ID:** VAT G15 E Elizabeth River-All outfalls

**Topo Name:** 035A Norfolk North

**Facility Address** 4201 Powhatan Ave Norfolk, VA 23508

## Receiving Stream:

| | |
|---|---|
| **Stream Name:** Elizabeth River-Outfall 001 | |
| | |
| **Stream Data Requested?** No | |
| **Outfall #:** 001 | **Lat Lon:** 36 52 57 76 19 20 |
| **Stream Name (2):** | |
| **All stormwater outfalls are not monitored-No Exposure Certifications have been given-No need for a tier determination** | |
| **Stream Data Requested?** | |
| | |
| | |
| | |
| | |
| | |
| | |

## Planning Review:

| | |
|---|---|
| **303 (d): Indicate Outfalls which discharge directly to an impaired (Category 5) stream segment** | |
| Outfall 001 discharges to impaired segment VAT-G15E_ELI02A06. Attachment 1 provides a list of impaired parameters. | |
| | |
| **Tier Determination** | |
| Tier | **The Elizabeth River Mainstem is a Tier 1 water. See Attachment 1 for listed impairments.** |
| Tier | |
| **Management Plan** | |
| Is the facility Referenced in a Management Plan? | No |
| | |

**Review will be completed in 30 days of receipt of request.**

**Additional Comments:**

| |
|---|
| KNB 3/20/2012 |

# 2010 Impaired Waters - 303(d) List

## Category 5 - Waters needing Total Maximum Daily Load Study

### James River Basin

| Cause Group Code / Impaired Use | Water Name / Cause | Cause Category | Estuary (Sq. Miles) | Reservoir (Acres) | River (Miles) | Initial List Date | TMDL Dev. Date |
|---|---|---|---|---|---|---|---|
| **APPTF-SAV-BAY** | Appomattox River | | | | | | |
| Aquatic Life | Aquatic Plants (Macrophytes) | 5A | 2.705 | | | 2006 | 2010 |
| Shallow-Water Submerged Aquatic Vegetation | Aquatic Plants (Macrophytes) | 5A | 2.705 | | | 2006 | 2010 |
| **EBEMH-DO-BAY** | Eastern Branch Elizabeth River, Broad Creek and Indian River | | | | | | |
| Aquatic Life | Oxygen, Dissolved | 5A | 2.287 | | | 2006 | 2010 |
| Open-Water Aquatic Life | Oxygen, Dissolved | 5A | 2.287 | | | 2006 | 2010 |
| **ELIPH-DO-BAY** | Chesapeake Bay segment ELIPH (Elizabeth River Mainstem) | | | | | | |
| Aquatic Life | Oxygen, Dissolved | 5A | 8.162 | | | 2006 | 2010 |
| Open-Water Aquatic Life | Oxygen, Dissolved | 5A | 8.162 | | | 2006 | 2010 |
| **G01E-01-BAC** | James River | | | | | | |
| Recreation | Escherichia coli | 5A | 1.466 | | | 1996 | 2010 |
| | Escherichia coli | 5A | 2.828 | | | 2006 | 2010 |
| | Escherichia coli | 5A | 1.964 | | | 2006 | 2010 |
| **G01E-02-CHLA** | James River | | | | | | |
| Aquatic Life | Chlorophyll-a | 5A | 5.512 | | | 2008 | 2010 |
| Open-Water Aquatic Life | Chlorophyll-a | 5A | 5.512 | | | 2008 | 2010 |
| **G01E-03-PCB** | James River and Various Tributaries | | | | | | |
| Fish Consumption | PCB in Fish Tissue | 5A | 62.773 | | | 2002 | 2014 |
| | PCB in Fish Tissue | 5A | 1.837 | | | 2004 | 2016 |
| | PCB in Fish Tissue | 5A | 191.816 | | | 2006 | 2018 |
| | PCB in Fish Tissue | 5D | | | 7.50 | 2006 | 2018 |
| | PCB in Fish Tissue | 5A | 0.012 | | | 2008 | 2014 |
| | PCB in Fish Tissue | 5A | 0.003 | | | 2010 | 2018 |
| **G01L-01-BAC** | Falling Creek Reservoir | | | | | | |
| Recreation | Escherichia coli | 5A | | 88.37 | | 2008 | 2020 |
| **G01L-01-PH** | Falling Creek Reservoir | | | | | | |
| Aquatic Life | pH | 5C | | 88.37 | | 2010 | 2022 |
| **G01R-01-BAC** | Goode Creek | | | | | | |
| Recreation | Escherichia coli | 5A | | | 1.25 | 2006 | 2014 |
| **G01R-02-BAC** | Almond Creek | | | | | | |
| Recreation | Escherichia coli | 5A | | | 2.36 | 2006 | 2010 |
| **G01R-02-PH** | XVO and XVP (Almond Creek, UTs) | | | | | | |
| Aquatic Life | pH | 5A | | | 0.54 | 2004 | 2016 |
| **G01R-03-BAC** | Falling Creek | | | | | | |
| Recreation | Escherichia coli | 5A | | | 3.11 | 2006 | 2014 |
| **G01R-04-BAC** | Falling Creek | | | | | | |
| Recreation | Escherichia coli | 5A | | | 16.99 | 2006 | 2018 |
| **G01R-04-DO** | Falling Creek | | | | | | |
| Aquatic Life | Oxygen, Dissolved | 5A | | | 0.98 | 2008 | 2020 |

# 2010 Impaired Waters - 303(d) List

## Category 5 - Waters needing Total Maximum Daily Load Study

### James River Basin

| Cause Group Code / Impaired Use | Water Name / Cause | Cause Category | Estuary (Sq. Miles) | Reservoir (Acres) | River (Miles) | Initial List Date | TMDL Dev. Date |
|---|---|---|---|---|---|---|---|
| **G14R-01-PH** | Carbell Swamp - Upper | | | | | | |
| Aquatic Life | pH | 5A | | | 2.55 | 2002 | 2014 |
| **G14R-02-BAC** | Carbell Swamp - Lower | | | | | | |
| Recreation | Escherichia coli | 5A | | | 2.86 | 2010 | 2022 |
| **G14R-02-DO** | Carbell Swamp - Lower | | | | | | |
| Aquatic Life | Oxygen, Dissolved | 5A | | | 2.86 | 2008 | 2020 |
| **G15E-01-01-EBEN** | Elizabeth River Southern Branch, Paradise, Saint Julian, New Mill and Deep Creeks & unsegmented estuaries in SBEMH | | | | | | |
| Aquatic Life | Estuarine Bioassessments | 5A | 2.256 | | | 2004 | 2016 |
| | Estuarine Bioassessments | 5A | 0.854 | | | 2006 | 2018 |
| **G15E-01-01-TCDD** | Elizabeth River Southern Branch and its tidal tributaries | | | | | | |
| Fish Consumption | Dioxin (including 2,3,7,8-TCDD) | 5A | 3.137 | | | 2010 | 2022 |
| **G15E-02-02-BAC** | Elizabeth River Upper Mainstem, Eastern Branch, Broad Creek, Southern Branch and Paradise Creek | | | | | | |
| Recreation | Enterococcus | 5A | 1.979 | | | 1998 | 2010 |
| | Enterococcus | 5A | 0.539 | | | 2006 | 2018 |
| **G15E-02-04-EBEN** | Eastern Branch Elizabeth River, Broad Creek and Indian River | | | | | | |
| Aquatic Life | Estuarine Bioassessments | 5A | 1.759 | | | 2004 | 2016 |
| | Estuarine Bioassessments | 5A | 0.586 | | | 2006 | 2018 |
| **G15E-02-05-BAC** | Indian River tributary of Eastern Branch, Elizabeth River | | | | | | |
| Recreation | Enterococcus | 5A | 0.268 | | | 2002 | 2014 |
| **G15E-03-01-EBEN** | Elizabeth River Mainstem | | | | | | |
| Aquatic Life | Estuarine Bioassessments | 5A | 4.528 | | | 2004 | 2016 |
| | Estuarine Bioassessments | 5A | 3.440 | | | 2010 | 2022 |
| **G15E-04-01-BAC** | Western Branch, Elizabeth River | | | | | | |
| Recreation | Enterococcus | 5A | 2.021 | | | 2004 | 2016 |
| **G15E-04-02-EBEN** | Western Branch Elizabeth River and Unsegmented estuaries in WBEMH | | | | | | |
| Aquatic Life | Estuarine Bioassessments | 5A | 0.562 | | | 2006 | 2018 |
| | Estuarine Bioassessments | 5A | 2.166 | | | 2010 | 2022 |
| **G15E-05-02-BAC** | Lafayette River | | | | | | |
| Recreation | Enterococcus | 5A | 1.558 | | | 2002 | 2014 |
| **G15E-06-01-BAC** | Hampton River | | | | | | |
| Recreation | Enterococcus | 5A | 0.545 | | | 2010 | 2022 |
| **G15E-06-03-BAC** | Hoffler Creek | | | | | | |
| Recreation | Enterococcus | 5A | 0.057 | | | 2008 | 2020 |
| **H01R-01-HG** | James River | | | | | | |
| Fish Consumption | Mercury in Fish Tissue | 5A | | | 15.55 | 2010 | 2022 |
| **H02R-01-BAC** | Pedlar River | | | | | | |
| Recreation | Escherichia coli | 5A | | | 9.46 | 2006 | 2018 |

# *Appendix A - List of Impaired (Category 5) Waters in 2010*

## James River Basin

***Cause Group Code:*** **ELIPH-DO-BAY** **Chesapeake Bay segment ELIPH (Elizabeth River Mainstem)**

**Location:** This cause encompasses the complete CPB segment ELIPH

**City / County:** Norfolk City Portsmouth City

**Use(s):** Aquatic Life Open-Water Aquatic Life

**Cause(s) / VA Category:** Oxygen, Dissolved / 5A

The Aquatic Life and Open-Water Aquatic Life Uses are impaired based on failure to meet the CBP dissolved oxygen criteria for Open Water - Summer & "Rest of Year (ROY) for the 2008 IR cycle. The 30-day dissolved oxygen criteria for open water use failed for the 2008 assessment. There is insufficient data to assess remaining shorter-term dissolved oxygen criteria for this use.

| Chesapeake Bay segment ELIPH (Elizabeth River Mainstem)<br>**Aquatic Life** | Estuary (Sq. Miles) | Reservoir (Acres) | River (Miles) |
|---|---|---|---|
| Oxygen, Dissolved - Total Impaired Size by Water Type: | **8.162** | | |

| Chesapeake Bay segment ELIPH (Elizabeth River Mainstem)<br>**Open-Water Aquatic Life** | Estuary (Sq. Miles) | Reservoir (Acres) | River (Miles) |
|---|---|---|---|
| Oxygen, Dissolved - Total Impaired Size by Water Type: | **8.162** | | |

Sources:

| | | | |
|---|---|---|---|
| Agriculture | Atmospheric Deposition - Nitrogen | Industrial Point Source Discharge | Internal Nutrient Recycling |
| Loss of Riparian Habitat | Municipal Point Source Discharges | Sources Outside State Jurisdiction or Borders | Wet Weather Discharges (Non-Point Source) |
| Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) | | | |

# *Appendix A - List of Impaired (Category 5) Waters in 2010*

## James River Basin

***Cause Group Code:*** **G01E-03-PCB** **James River and Various Tributaries**

**Location:** Estuarine James River from the fall line to the Hampton Roads Bridge Tunnel, including several tributaries listed below: Appomattox River up to Lake Chesdin Dam
Bailey Creek up to Route 630
Bailey Bay
Chickahominy River up to Walkers Dam
Skiffes Creek up to Skiffes Creek Dam
Pagan River and its tributary Jones Creek
Chuckatuck Creek
Nansemond River and its tributaries Bennett Creek and Star Creek
Hampton River
Willoughby Bay and the Elizabeth R. system (Western, Eastern, and Southern Branches and Lafayette R.) and tributaries St. Julian Creek, Deep Creek, and Broad Creek

**City / County:**

| | | | | |
|---|---|---|---|---|
| Charles City Co. | Chesapeake City | Chesterfield Co. | Colonial Heights City | Dinwiddie Co. |
| Hampton City | Henrico Co. | Hopewell City | Isle Of Wight Co. | James City Co. |
| New Kent Co. | Newport News City | Norfolk City | Petersburg City | Portsmouth City |
| Prince George Co. | Richmond City | Suffolk City | Surry Co. | Virginia Beach City |
| Williamsburg City | | | | |

**Use(s):** Fish Consumption

**Cause(s) / VA Category:** PCB in Fish Tissue / 5A PCB in Fish Tissue / 5D

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for PCBs fish tissue contamination within the James River and select tidal tributaries, issued 12/13/04. During the 2002 cycle, the James River from the Fall line to Queens Creek was considered not supporting of the Fish Consumption Use due to PCBs in multiple fish species at multiple DEQ monitoring locations.

During the 2004 cycle, a VDH Fish Consumption Restriction was issued from the fall line to Flowerdew Hundred and the segment was adjusted slightly to match the Restriction.

However, during the 2006 cycle, the restriction was extended on 12/13/2004 to extend from the I-95 bridge downstream to the Hampton Roads Bridge Tunnel and include the tidal portions of the following tributaries:

Appomattox River up to Lake Chesdin Dam
Bailey Creek up to Route 630
Bailey Bay
Chickahominy River up to Walkers Dam
Skiffes Creek up to Skiffes Creek Dam
Pagan River and its tributary Jones Creek
Chuckatuck Creek
Nansemond River and its tributaries Bennett Creek and Star Creek
Hampton River
Willoughby Bay and the Elizabeth R. system (Western, Eastern, and Southern Branches and Lafayette R.) and tributaries St. Julian Creek, Deep Creek, and Broad Creek

# *Appendix A - List of Impaired (Category 5) Waters in 2010*

## James River Basin

The advisory was modified again on 10/10/2006 to add Poythress Run.

| James River and Various Tributaries<br>**Fish Consumption** | | Estuary (Sq. Miles) | Reservoir (Acres) | River (Miles) |
|---|---|---|---|---|
| | PCB in Fish Tissue - Total Impaired Size by Water Type: | **256.441** | | **7.50** |

Sources:

| | | |
|---|---|---|
| Contaminated Sediments | Source Unknown | Sources Outside State Jurisdiction or Borders |

# *Appendix A - List of Impaired (Category 5) Waters in 2010*

## James River Basin

***Cause Group Code:*** **G15E-03-01-EBEN** **Elizabeth River Mainstem**

**Location:** This cause encompasses the entirety of the Elizabeth River Mainstem. CBP segment SBEMH. BIBI segment ELIMHa.

**City / County:** Norfolk City Portsmouth City

**Use(s):** Aquatic Life

**Cause(s) /**
**VA Category:** Estuarine Bioassessments / 5A

The Aquatic Life Use is impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis. The source/stressor tool yielded an unknown source for the impairment. This segment was previously included (2004 IR) in TMDL ID: VAT-G15E-01-09.
The TMDL due date is carried from the previous 2004 IR impairment identification date.
Previous Use ID = VAT-G15E-01-09 for benthic impairment.

This Cause Code (G15E-03-01-EBEN) relates to all benthic impairments within the Elizabeth River system.

| Elizabeth River Mainstem<br>**Aquatic Life** | Estuary (Sq. Miles) | Reservoir (Acres) | River (Miles) |
|---|---|---|---|
| Estuarine Bioassessments - Total Impaired Size by Water Type: | **7.968** | | |

Sources:

Contaminated Sediments Source Unknown

# VIRGINIA

# 305(b)/303(d)

# WATER QUALITY INTEGRATED REPORT

to

# CONGRESS and the EPA ADMINISTRATOR

for the

# PERIOD

January 1, 2003 to December 31, 2008



Richmond, Virginia

November 2010

# ATTACHMENT 8

# TABLE III(a) AND TABLE III(b) - CHANGE SHEETS

TABLE III(a).

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes FROM PREVIOUS PERMIT and give a brief rationale for the changes).

| OUTFALL NUMBER | PARAMETER CHANGED | MONITORING LIMITS CHANGED FROM / TO | EFFLUENT LIMITS CHANGED FROM / TO | RATIONALE | DATE & INITIAL |
|---|---|---|---|---|---|
| 001 | Total Nitrogen | No Monitoring/ 1/M and 1/Year-Annual Concentration Average | NL / 5.0 mg/l Annual Conc. Average | 9 VAC 25-40-70A authorizes DEQ to include technology based annual concentration limits in the permits for facilities that have installed nutrient control equipment, whether by new construction, expansion, or upgrade. VIP is upgrading the nutrient removal facilities. A CTC was issued for the project on 3/24/14. The CTC lists the capabilities of the nutrient removal facilities. | 5/28/14 DDA |
| 001 | Total Phosphorus | | 2.0 mg/l to 1.0 mg/l Annual Conc. Average | 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. VIP is upgrading the nutrient removal facilities available and has been issued at CTC for the project on 3/24/14. The CTC lists the capabilities of the nutrient removal facilities. | 5/28/14 DDA |
| | | | | | |

F

| OTHER CHANGES: | COMMENTS: | DATE & INITIAL |
|---|---|---|
| Special Condition C.12 was updated to include Total Nitrogen Language | Since Total Nitrogen was added to the permit, information on how to calculate for reporting needed to be addressed. | 5/28/14 DDA |
| | | |

TABLE III(b)

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes MADE DURING PERMIT PROCESS and give a brief rationale for the changes).

| OUTFALL NUMBER | PARAMETER CHANGED | MONITORING LIMITS CHANGED FROM / TO | EFFLUENT LIMITS CHANGED FROM / TO | RATIONALE | DATE & INITIAL |
|---|---|---|---|---|---|
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| OTHER CHANGES FROM: | CHANGED TO: | DATE & INITIAL |
|---|---|---|
| | | |
| | | |

# ATTACHMENT 9

# CHRONOLOGY SHEET

# Chronology

*Friday, June 27, 2014*

**Facility Name: HRSD - Virginia Initiative STP** *VA0081281*

| *Event* | *Date* | *Comment* |
|---|---|---|
| App complete letter sent to permittee: | — | NA-Board Mod |
| Application fee deposited: | — | NA-Board Mod |
| Site inspection report: | — | Same as Reissuance |
| Site visit: | — | Same as Reissuance |
| Permit effective: | — 1/28/2013 | |
| Application Administratively complete: | — 3/24/2014 | Board Mod-Date of CTC |
| Application received at RO 1st time: | — 3/24/2014 | Borad Mod-Date of CTC |
| Application totally / technically complete: | — 3/24/2014 | Board Mod |
| App sent to State Agencies (list in comment field): | — 5/27/2014 | VDH DSS |
| Comments rec'vd from State Agencies on App: | — 6/10/2014 | VDH response. No response from DSS as of 6/27/14. |
| Draft permit developed: | — 6/11/2014 | |
| Draft reviewed: | — 6/23/2014 | |
| FS/SOB draft permit sent to owner: | — 6/27/2014 | |
| Permit expires: | — 1/27/2018 | |